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ABSTRACT

Based on the premise that research findings about children's language acquisition might support theories about the learning of reading, this paper reviews research that has addressed the development of language production and the relationship between language ability and reading achievement. The first section of the literature review deals with research offering explanations of language production development, and includes discussions of the nativist and cognitive theories of language acquisition. The second section presents research concerned with the interaction between language development and learning to read, and covers those studies that (1) directly apply language theories to reading achievement, (2) see a difference between oral and written language and, therefore, a difference in learning to speak and learning to read, and (3) consider oral language competency to be important in learning to read. The paper concludes that reading teachers must become aware of elements of language competence, but cautious about assuming a direct carryover of this competence to reading tasks. (FL)

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LEARNING TO SPEAK AND LEARNING TO READ

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LEARNING TO SPEAK AND LEARNING TO READ

The way in which children acquire competence in their native language reveals much about the nature of language itself. For example, studies of children's early utterances have leant support to Chomsky's (1959) criticism of Skinner's (1957) behaviorist approach to language and to the emphasis on meaning that is the chief legacy of the Chomskian revolution in linguistics.* It might be supposed that research findings about children's language acquisition would play a similar supporting role for theories about the learning of reading, a language-related activity. In this paper, research will be reviewed that attempts to explain the development of language production, and that addresses the issue of language ability and reading achievement.

I. Explanations of Language Production Development

A recurring discovery of research in the development of language production is the regular, systematic, and often universal nature of that development. Examples include the systematic evolution of word meaning (E. Clark, 1973; and Nelson, 1974); the universal importance of word order (Slobin, 1971; and Braine, 1976); and the regular order of appearance of sounds (Jakobson, 1971; and Foss and Hakes, 1978),

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*See Wardhaugh (1971) for a discussion of behaviorist, nativist, and cognitive theories of language acquisition and relevant findings from studies of children's speech.

forms of negation (Bellugi, 1967), forms of the interrogative (Bellugi, 1965), inflections (Gleason, 1958), obligatory syntactic features (Brown, 1973), and transformations (Menyuk, 1969). Considering that a behaviorist theory of language can not account for all such regularities (Wardhaugh, 1971) nor for the limited role of expansion and imitation in language learning (Brown and Bellugi, 1964; and Cazden, 1965), other explanations must be sought. The two main alternatives are the nativist and cognitive theories of language acquisition.

Nativist Theory

Chomsky (1959) began the attack on the behaviorist concept of language, characterized by the title of Skinner's book about language, Verbal Behavior (1957). Chomsky has since delineated his theory of an innate facility for language learning, or universal grammar (1967, 1968, 1972, 1980). There are general, biologically determined restrictions on the kind of hypotheses that children can form about the language they learn (e.g., that sentences are of the form subject-predicate, that natural languages make use of transformational rules, that the latter depend upon structure, and that phonological rules are applied cyclically). The general restrictions constitute universal grammar; the specific hypotheses about the language that the child learns characterize the child's language competence and define his or her particular grammar. Rosemont (1974) emphasizes the language-specificity of the innate mental structure that Chomsky hypothesizes and points out that Chomsky's quarrel is with empiricism in general, rather than with behaviorism in particular.

McNeill's (1970) concept of an innate language acquisition device (LAD) is consistent with Chomsky's theory. Giordano (1979) outlines support for the innateness hypothesis, especially for language ability being discrete from other, latter-developing forms of abstract ideation. He goes on to describe an approach to reading readiness instruction that would make use of the same inherited aptitudes that promote oral language learning. Lenneberg's (1967) detailed descriptions of physical correlates of language have leant support to Chomsky's theory.

Eveloff (1971) contends that the biological potential for language must be developed by others' of the species relating to the child within emotional and cognitive limits. He describes ways in which neurophysiological, cognitive, and affective factors are related. A symbiotic bond, partly the result of the child's adaption to novelty (a cognitive function), plays an important role in the child's language learning. The parents' desire to communicate contributes to the child's linguistic growth during the prelingual and babbling stages; the child's need to overcome separation and to enhance his or her relationship with the parents is important during the stages of limitation and early articulate utterance. Eveloff also explains the beginning use of syntax and the acquisition of consensual knowledge.

Cognitive Theory

A cognitive explanation of language acquisition emphasizes biologically determined mental abilities, but sees no need to characterize any such abilities as language-specific . Several observations point

to a relationship between speech development and the development of general cognitive ability. Bloom (1970), in describing telegraphic speech as conceptually based, says that at that stage the child is aware of more types of meaning relationships than he or she can reveal through the linguistic devices that he or she controls. Greater control, greater language competence, results from three factors: linguistic experience, non-linguistic experience, and cognitive-perceptual development. As mean length of utterance (MLU) increases, a relationship between complexity of the concept and complexity of the utterance becomes evident; the more complex the former, the less complex the latter. Conceptualization and production share access to the child's still imited processing capacity. McNeill (1970) accounts for holophrases (one-word utterances) as their being the left-overs when parts of sentence-like concepts are lost before production. Greenfield and Smith (1976) point out that cognitive development is in advance of linguistic development at the one-word utterance stage. Menyuk (1969) explains observed development in children's sentence structure in terms of growth in memory capacity. Even the developmental acquisition of speech sounds is partly explainable in terms of increasing control of such production processes as voice-onset time (Port and Preston, 1972).

Besides memory and control of specific production processes, other general cognitive abilities come into play, such as those that characterize Piaget's stages of development. Foss and Hakes (1978) point out that the child's understanding of object permanence surely contributes to the onset of one-word utterances and that the change from

the sensory motor to the preoperational stage seems to parallel the transition to utterances longer than one word, in which words must be seens as parts of wholes. Flavell (1977) argues for the existence of cognitive, rather than linguistic, universals. He tells that children use the same strategies to interpret both non-linguistic events and language.

Slobin, among linguists, makes the strongest claim that general cognitive and mental development is the critical determinant of language acquisition. Contributing factors are growing ability to deal with the world, increasing short- and long-term memory ability, and strengthening information processing ability (Slobin, 1966). Slobin asserts that fundamental structures of particular grammar are in place by age three, and that further linguistic development reflects lifting of performance restrictions and general cognitive growth (1970). He demonstrates that Russian children's development of grammatical categories is determined by the semantic difficulty represented by the category (e.g., singular and plural forms appear early, arbitrary markers of grammatical gender appear late) (1966). Slobin also points out that bilingual children express a concept earlier in the language in which it has the simpler form (1973).

The disagreement between the nativists and the cognitive theorists is not nearly as fundamental as their common differences with the behaviorists. In many cases it reflects a difference in emphasis and in choice of data. It seems that there may be linguistic and cognitive universals. The former restrict the forms into which human lan-

guages may evolve and the child's innate acquaintance with them directs -- makes most efficient -- his or her application of the latter to the task of learning language.

II. Interaction Between Language Development and Learning to Read

Several courses of action follow from a direct application of knowledge of language development to reading learning. For example, it will be recalled that Giordano (1979) suggests a reading readiness program that is a direct application of the nativist theory of language acquisition to reading. Differences between oral and written language, however, raise questions about the value of such direct applications. Still, there remain other areas of overlap between oral language and reading learning.

Direct Applications

Two explanations of the reading process emphasize the parallels between oral and written language, their common dependence upon syntactic and semantic constraints. Goodman (1967 and 1973) calls reading a psycholinguistic guessing game with graphophonic, syntactic, and semantic clues. By sampling, predicting, testing, and confirming, the reader determines the writer's message with minimal dependence upon graphemes. F. Smith's (1971) description of the reading process in terms of reduction of uncertainty is similar. The amount of dependence upon visual features varies with the amount of syntactic and semantic information that is available. Studies of children's oral reading errors, even in the first grade (Weber, 1970), reveal

a grammatical awareness of preceding text, which lends support to such theories of reading.

Examples of efforts to coordinate the reading and language-processing abilities of children include comparisons of the language in reading texts and the oral language of children. Strickland (1962) found that the former was more advanced than the latter, and that reading texts seemed to lack a scheme for controlling introduction of sentence structures. Ruddell (1974) tested fourth graders' comprehension of texts written with common and uncommon syntactic patterns, using close tests. He found better comprehension of high frequency syntactic patterns. Shuy (1969) called for a new system of language arts instruction, emphasizing self-instruction, stressing the innate ability of students, and using texts that reflect children's oral language.

Bougere's (1969) and Dahl's (1975) studies are examples of attempts to identify oral language predictors of beginning reading success. Bougere failed to find significant results for most of her hypotheses and Dahl's data is still being analyzed.

Differences Between Oral and Written Language

Carroll (1966) points out some important differences between learning to speak and learning to read. Reading is taught, while speech is acquired informally; reading is broken down into components of the task and abstracted, while speech is experienced in its full complexity and remains situational; reading is taught before writing, while listening and speech develop in a parallel fashion; reading may be taught

as a subordinate coding skill, while speaking is always functional and meaningful to the child.

D. Olson (1977) describes fundamental differences between utterance and text, traceable to their being different means to different goals, not optional routes to the same goal. He argues against the presumptions that knowledge is not altered when it is transformed into statements and especially that statements are not altered when they are written down. Written language was invented to serve science and philosophy and their vision of reality, with an emphasis on truth conditions, explicitness, and conventionalized language forms. The functions and structures of language were altered to meet the demands of autonomous text, a process that began at least as long ago as Luther's time. When children first experience text, they encounter something completely foreign. Their previous experience is with utterance, a form of language that serves social needs and in which meaning is negotiable.

Schallert, Kleiman, and Rubin (1977) also analyze differences between oral and written language. Speakers tailor their messages with specific listeners in mind, and they receive feedback from the listeners. They use less complicated syntax and less diverse vocabulary than writers. And they use intonation for prosadic cues. Thus readers may require more comprehensive knowledge schemata than listeners, greater knowledge of syntax and vocabulary, and greater skill at taking another's perspective.

Rosemont (1974) maintains that language that is transferred to a non-speech medium is no longer natural language.

Tatham (1970) tested second and fourth graders' reading comprehension with two different tests, one that used frequent oral language patterns and one that used infrequent oral language patterns. A significant number of children did better with the test that used frequent patterns, and the difference in results on the two tests was greater for second graders than for fourth graders. Tatham concluded that the second graders may lack the ability to relate oral language competency to written language.

The point of these findings seems to be that written language is not as simple a matter as "speech written down," and that our knowledge about oral language ability may not have direct implications for reading learning.

Oral Language Competency and Learning to Read

There remains to be considered another aspect of language competence, the mature speaker's ability to reflect upon language. This metalinguistic ability is evidenced by linguistic intuitions, the speaker's capacity to make judgements about such properties of utterances as grammaticality, synonymity, and ambiguity. Another aspect of such ability may be knowledge of such concepts as "letter", "word", and "sentence" (cf., Downing, 1973, regarding "cognitive clarity" about such concepts, as a prerequisite to learning to read). This may be one aspect of language competency that overlaps with reading

ability. It is acquired at roughly the same age that formal reading instruction begins.

Mattingly (1972) makes the distinction between a language-based skill, e.g., Pig Latin or reading, and primary linguistic activity, e.g., speaking and listening. He maintains that reading depends upon linguistic awareness, and that -- unlike during speaking and listening -- that awareness is never inaccessible during reading. Nurss (1980) reviews literature about linguistic awareness and reading and cites C. Chomsky's report, at a 1979 conference on the subject, that before third grade, children are unable to focus simultaneously on syntactic structure and meaning. She had asked grade-school children to make grammaticality judgements. Hakes, Evan, and Turner (1976) report that before age six, children's grammaticality judgements are based on content -- what is asserted -- rather than on form. McGhee (1974) reports that not until age six or seven do children understand puns, riddles, and other "linguistic" jokes.

Still, an obvious question remains: whether linguistic awareness -- coinciding as it does with formal reading instruction -- is a product of or a prerequisite to that instruction. Nurss (1980) concludes that at least word consciousness is a product. Foss and Hakes (1978) point out that linguistic intuitions may reflect the child's transition from preoperational to concrete operational thought, but they also point out that this step has only begun at age five, when reading instruction is taking place in many of our schools. They question the assumption that the child's knowledge of spoken language is

great enough that it does not present any problems with learning to read. For example, children at age five and six usually do not know what phonological units are and so can not know what graphemes are meant to correspond to. They cite Weinschenk (1965) that even German children -- learning to read a language with more regular phoneme-grapheme correspondence than English -- have difficulty learning to read.

The conclusion seems to be that teachers of reading must proceed with care. They must be aware of elements of language competence, but cautious about assuming direct carryover to reading tasks. And they ought to be sensitive to individual differences among children with respect to their level of development.

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